

## Parker Motor

### POWERS BRAMMO'S NEW ELECTRIC RACE BIKE

MPP series traction motors from Parker's Electromechanical Automation Division power an all-electric motorcycle built by Brammo Inc. The bike is built for speed and was recently unveiled at the Red Bull U.S. Grand Prix at the Mazda Raceway in Laguna Seca, CA, where a major race took place as part of the FIM e-power race series. It was the perfect venue to display the bike's sleek lines and spark the interest of competitors and enthusiasts alike.

"The Brammo engineering team has been an exceptional group to work with," says Jay Schultz, Parker product manager. "They exemplify what high-performance engineering is all about, which parallels Parker's commitment to engineering our customers' success. And it shows in this bike."

Designed for the demanding applications found in today's high-performance electric and hybrid vehicles, Parker's MPP traction motors offer lower weight and higher power, all in a smaller package than other traction motors. Parker's MPP motors include Parker's exclusive dual-cooling implementation, which features a patent-pending internal cooling technology. According to Parker's press release, this design yields up to 40 percent higher torque per unit size than conventionally constructed permanent magnet motors and can deliver 20–350



kW of power with 97 percent efficiency.

When the bike makes its racing debut in September, leaders in the racing circuit will have a serious new contender vying to capture the winning trophy. Brammo plans to market a street version of the race bike for the commercial market next year. Brammo and Parker are working through the details around a smaller MPP motor for the production version.

"Working with Parker has been an outstanding, positive experience," says Roger Gerson, Brammo's electrical engineering manager. Gerson and his team designed the gear-reduction enclosure that houses the MPP motor,

working closely with Parker in a very compressed timeframe. "We've leveraged Parker's leading-edge R&D work and stretched it to the max."

#### For more information:

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## Bearing Units Self-Align

The ready-to-mount bearing units from NKE consist of a bearing fitted in a cast or pressed housing for material handling systems, such as conveyors, as well as applications in the heavy

and agricultural machinery and steel industries.

The bearing unit's housings can be combined with a range of bearing inserts. The cast iron housings are resistant to deformation and can absorb moderate to high loads. The pressed sheet steel housing models are suited

**continued**

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EXAMPLE  
MGT planetary magnetic  
gear box



for applications with lower loads due to their lower weight and simpler installation.

The bearing inserts consist of single-row deep groove ball bearings that are sealed on both sides against moisture, splash water and dust. Various seal types are available for different applications. The bearings are secured to the shaft with set screws or eccentric locking collars, which simplifies the installation. The bearings are factory lubricated and most bearing-housing combinations

can be re-lubricated during operation to extend service life. The special version SQ171 is coated for enhanced corrosion protection.

The spherical design of the bearings' outer diameters and the housings' inner diameter enable the units to self-align, so any misalignments that occur during installation or operation are compensated. NKE's bearing units are interchangeable with products from leading manufacturers.

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## Plastic Shaft Collars

### MATCH PROCESSING REQUIREMENTS

Custom shaft collars machined from various thermoplastics to match process applications requiring chemical resistance and frequent washdowns are available from Stafford Manufacturing Corp.

The Stafford plastic clamp-type shaft collars are offered in one- and two-piece styles and are supplied with stainless steel clamping screws for use in FDA- and USDA-approved processing equipment and conveyors. They are machined from Teflon, Delrin, nylon and other thermoplastics, so designers can specify collars that precisely match other system components.

Available in one to four-inch ID bore sizes, the plastic clamp-type shaft collars are appropriate for applications such as food and pharmaceutical processing. Stainless steel, steel and anodized aluminium collars are also available.

The plastic clamp-type shaft collars are priced according to material, size and quantity. Samples and price quotations are available on request.

**For more information:**

Stafford Manufacturing Corporation  
P.O. Box 277  
North Reading, MA 01864  
Phone: (800) 695-5551  
Fax: (978) 657-4731  
[www.staffordmfg.com](http://www.staffordmfg.com)



## New Higher Torque Magnetic Particle Brakes



Ogura has developed two new models of the OPB series of magnetic particle brakes. The two new models, OPB 120N and OPB 250N, are rated at 110 in.-lbs. and 220 in.-lbs. respectively. The largest previous model in the OPB series was rated at 70 in.-lbs.

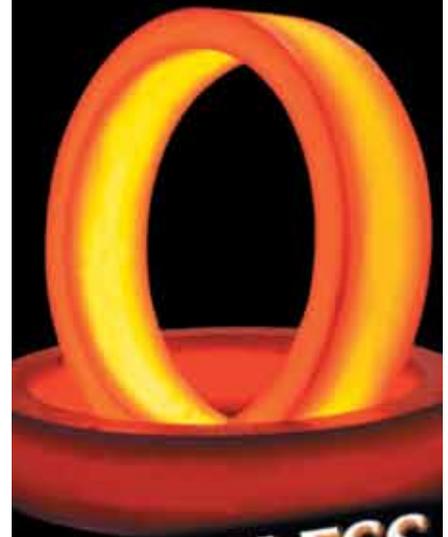
Heat dissipation of the 120N is 80 watts and heat dissipation of the 250N is 100 watts, but both brakes will have an optional mounted fan to increase heat dissipation to 200 watts and 240 watts, respectively. Although the brakes are mainly used for tension control of foil, film, wire and paper, there are many other industrial applications where soft stops can be of benefit. Since output torque is almost directly proportional to input voltage/current, torque can be controlled very quickly and accurately. For example, a conveyor system conveying a delicate or sensitive product would require a controlled stop to avoid damage. The new brakes are designed to be less costly than the old PB series and

will be more readily available.

All Ogura manufacturing facilities are ISO recognized and conform to the ISO 9001;2008, ISO 140001, and ISO/TS 16949 standards.

#### For more information:

Ogura Industrial Corp.  
P.O. Box 5790  
Somerset, NJ 08875  
Phone: (732) 271-7361  
[www.ogura-clutch.com](http://www.ogura-clutch.com)



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## Vertical Lift Stage

OFFERS 2 NM RESOLUTION

Aerotech's ANT130-5-V is a linear-motor-driven wedge-style vertical lift stage that provides the resolution, accuracy and in-position stability required in nanopositioning applications, all while offering travel up to 5 mm. It is a precision stage that is suitable for industrial applications. The ANT130-5-V was designed for stand-alone use or can be integrated with other stages in the Aerotech ANT stage family for a multi-axis nanopositioning system.

ANT130-5-V stages utilize advanced direct-drive technology, pioneered by Aerotech, as well as anti-creep crossed-roller bearings for positioning performance. Aerotech direct-drive technology is non-cogging, non-contact, high-speed, high-resolution, and high-accuracy. The lack of hysteresis or backlash enables accurate and repeatable nanometer motion. The drive and bearing combination, packaged in a compact profile and footprint, offers tangible advantages in high-precision positioning applications such as disk-drive fabrication, fiber alignment, optical delay element actuation, sensor



testing, and scanning processes that demand smooth, precise, stable, and repeatable motion.

The ANT130-5-V family has universal mounting and tabletop patterns that allow for easy system integration. Two, three or more axes can be easily combined for flexible system designs and multi-axis configurations.

Outstanding accuracy, position repeatability, and in-position stability require high system resolution. The ANT130-5-V stage provides 2 nm

minimum incremental step size. The ANT130-5-V series data sheet is available at: <http://www.aerotech.com/products/NANO/ant1305v.html>.

### For more information:

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[www.aerotech.com](http://www.aerotech.com)

## DC Gearmotor

DEVELOPS 214 LB.-IN.  
TORQUE AT 23 RPM



Midwest Motion Products announced the release of a new DC gearmotor, the Model No. MMP-TM57-12V GP52-195. Accepting any 12-volt DC source, including battery power, this gearmotor measures just 2.24" diameter by 7.75" long, and has a keyed output shaft of 12 mm diameter by 25 mm long. Easy mounting is accomplished with four face-

mount M5 threaded holes. The output of this reversible gearmotor is rated for 214 lb.-in. continuous torque at 23 RPM and 443 lb.-in. peak torque.

Despite its compact size and weight of approximately four pounds, it requires just 7.2 amps at 12 volts DC to generate its full-load torque. That translates into long life battery charge, very low noise

**continued**

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operation, and lower costs for related drive electronics. Motor windings for 24, 28, 36, 48, 60 and 90 volts are available. This design is rated at an IP 54 protection level for operation in harsh environments. Variable Speed can be accomplished with MMP's fully compatible speed controls, Model MMP

25A-12V or MMP 20A-12V-RSP.

Samples are available from stock for rapid prototyping needs. An up-to-date listing of finished products available from stock can be found at <http://www.midwestmotion.com/inventory.pdf>.

**For more information:**

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## Modulated Hydraulic Pressure Source

CONTROLS BRAKE TORQUE

The 520 Series hydraulic apply caliper disc brake for on- and off-highway service braking applications uses a modulated hydraulic pressure source, such as a master cylinder, to control brake torque. The brake can be mounted in a vertical or horizontal position, and linings can be replaced without removing the brake.

The brake includes two ductile iron caliper halves that are pressurized by a single inlet port cross-over tube feature, which allows hydraulic pressure to actuate the 2.25-inch diameter piston in each half. The unit provides for continuous duty pressure of 1,000 psi and intermittent duty pressure of 1,500 psi. Approximately 17 pounds, the brake needs a minimum disc diameter of 15 inches.

The caliper disc brake features a spring-operated lining retractor mechanism that maintains a constant

lining-to-rotor disc clearance distance whenever the brake is not applied to reduce unnecessary lining wear. The lining contact area totals 12.4 square inches, with a usable lining thickness of 0.32 inches on each side. Linings can be replaced without disassembling or removing the brake for reduced maintenance time and costs.

Mounting in either a horizontal or vertical position, the brake is flexible and installs simply. The unit can be attached directly to a threaded hanger or clamp.



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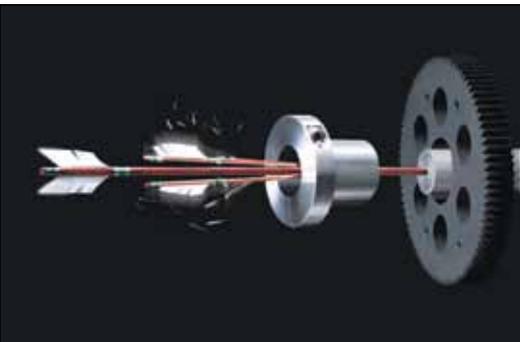
## Shaft-Locking Bushings

PROVIDE HIGHER CONCENTRICITY FOR GEARS, PULLEYS AND SPROCKETS

ETP shaft locking bushings from Zero-Max produce accurate and concentric mounting compared to mechanical shaft locking bushings.

ETP bushings incorporate a double-walled sleeve encapsulating a pressure medium. When the actuation

screw is tightened, it forces the inner and outer wall of the bushing to expand uniformly against the shaft and hub of the mounted component. The result is concentricity to .001" total indicated runout (TIR). Mechanical devices, by comparison, rely on precise and accu-



rate tightening of the actuation screws to avoid excessive TIR. Additionally, extremely high compressive forces are imparted on the shaft by mechanical bushings.

ETP bushings are designed for applications in which repeated mounting and dismantling of components is required. The ETP Classic has flange-mounted actuation screws. The ETP Express has just one mounting screw positioned in a radial location, allowing for fast, easy and accurate mounting of components. The single actuation screw saves space, time and is easy to access.

Both ETP Classic and ETP Express operate in temperature ranges from -22 degrees to 180 degrees F.

The ETP Classic handles torque ranges from 40 to 11,413 ft.-lbs. while the ETP Express handles torque ranges from 40 to 6,400 ft.-lbs. Both require no lubrication. They are available in a full range of inch and metric sizes in both standard steel and stainless steel.

#### For more information:

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## Safety Clutch

INCORPORATES SENSOR  
WITH SIGNAL TRANSMITTER



Safety clutches provide precise torque limiting to ensure that the loads on components in machines and facilities do not exceed allowable levels. Up to now they have required an external limit switch and associated cable to send a signal to the controller if an overload situation occurred. The new EAS-Sensor safety clutch with integrated signal transmitter developed by Mayr Antriebstechnik sends the overload signal wirelessly. This has considerable advantages compared with conventional signal transmission.

The stroke of a safety clutch when it disengages due to excessive torque is only a few millimeters. This small amount of travel is all that is available to change the state of a built-in mechanical or contactless limit switch. Consequently, external limit switches must be fitted and adjusted precisely and with great care to ensure that they operate reliably. However, under certain conditions, even the greatest possible care is in vain, for example when the position of the safety clutch shifts during operation as a result of thermal expansion.

With the new EAS-Sensor, the limit switch is integrated directly in the clutch. It detects the disengagement motion of the clutch in case of overload and transmits the signal wirelessly to a base station connected to the machine controller. The EAS-Sensor is adjusted in the factory for proper operation, eliminating the need for assembly and adjustment effort. External factors such as vibration or axial offset of the clutch, which may result from thermal expansion of the shaft, do not impair operational reliability.

The transmitter of the new unit, including its power supply, is entirely contained in the torque adjustment nut of the EAS-compact safety clutch. It reports the operating state of the clutch at regular, short intervals, along with information on the supply voltage level. If the supply voltage drops, a warning signal is triggered early enough to allow the transmitter battery to be replaced promptly. This does not require dismounting the clutch.

The new EAS-Sensor is better than conventional safety clutches with exter-

nal limit switches, especially in the following application scenarios. In the case of drives with moving shafts, such as robot arms, it is not necessary to move brackets and cable guides along with the drives. This makes the entire assembly significantly simpler and more reliable. Reliable signal transmission is also ensured with drives subjected to vibration or horizontal motion. Axial offset of the clutch, for example as a result of the thermal expansion of the shaft, can easily lead to false triggering in conventional systems with externally fitted signal transmitters. Naturally, the EAS-Sensor is an option for applications where there is simply no room to fit an external limit switch. In addition, the new device is an option when drives must be installed on site. It is ready to install out of the box.

### For more information:

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[www.mayrcorp.com](http://www.mayrcorp.com)

## New Linear Actuators

OFFER COMPACT SIZE &  
DUST/WATER PROTECTION

Nook Industries has recently introduced its NIA Acme and Ball Screw Series linear actuators that offer compact size configuration and protection against solid (dust, airborne particles,

etc.) and liquid (rain, water spray, etc.) elements. This cost-efficient series is designed for light-duty indoor/outdoor applications.

All of the NIA Series linear actuators are designed to deliver IP54 protection against dust or water intrusion as a standard. They are also offered with IP65 protection as an option. Design elements contributing to these high IP ratings include a steel extension tube, powder metallurgy gears and an aluminum alloy housing.

The NIA Series offers a standard 110/115/230 VAC single-phase split capacitive motor that delivers a 25 percent duty cycle. There is no need to purchase an external capacitor because it is supplied. Other standard performance characteristics for both acme and ball screw versions include dynamic load capacity of 1,500 lbs. and less, stroke lengths from 4" to 24", working

temp. of -26 degrees C to +65 degrees C, self-locking, and overload protection by clutch. Optional potentiometer feedback and adjustable limit switches are also available to extend added-value for unique applications on both versions.

Nook also offers its ND8 Ball Screw Series as a 12/24V DC Motor option that delivers the same key design variables with the addition of 65 mm/sec maximum speed, stroke length of 100-600 mm, and no back driving. This series is ideal for mobile off-highway applications (lifts on the back of vehicles, wheel chairs, etc.).

**For more information:**

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(800) 321-7800  
[www.nookindustries.com](http://www.nookindustries.com)



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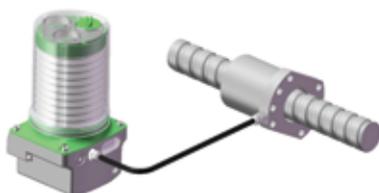
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## Cabinet Inverters

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Six sizes of the NORD SK 500E series control cabinet inverters are available, with outputs from 0.25 kW to 22 kW. Once the output range has been set, whether the basic model or a fully-equipped package of functions, the external dimensions of the unit are identical. Especially for conversions or extensions of functions, the uniform space requirements regardless of the options selected makes life easy for users.

Many common industrial applications can be implemented out of the box with these cost-effective units. All versions are equipped with brake management, brake chopper and mains filter, and they also provide sensorless current vector control, PID controller for process control as well as switchable parameter sets. Input and output options include two analog inputs and an analog output as well as two relay outputs, providing a wide range of connection options even with the basic model.

### For more information:

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